

Verification Report No.: SHAEC23002280501 Date: May 05, 2023 Page 1 of 9

Client Name: Jiangsu DINGS' Intelligent Control Technology Co., LTD

Client Address: 355 Longjin Road, Changzhou Economic Development Zone, Jiangsu, China

Sample Name: Slotless Brushless DC Motor

Tested Basic Model No.: 28ZWWC52-5

Client Ref. Information: 16/22/24/28/30/36/42/50

Manufacturer: Jiangsu DINGS' Intelligent Control Technology Co., LTD

The above sample(s) and information were provided by the client.

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SGS Job No.: SP23-005852 Sample Receiving Date: Mar 07, 2023

Verification Period: Mar 07, 2023 ~ Apr 24, 2023

Verification Requested: With reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

Verification Method(s): Please refer to next page(s).

Verification Result(s): Please refer to next page(s).

## **Test Result Summary:**

Test Items	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive	
2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated	
biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl)	Pass
phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and	
Diisobutyl phthalate (DIBP)	

Signed for and on behalf of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Jessica Chen Approved Signatory





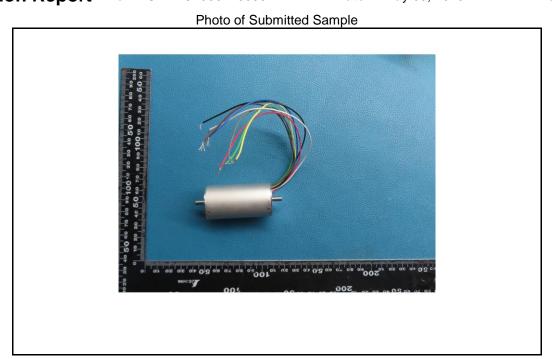
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Verification Method(s):

- 1. With reference to IEC 62321-2:2021, disassembly and disjointment were performed for the submitted samples.
- 2. With reference to IEC 62321-1:2013, tests were performed for the samples indicated by the photos in this report.
- (1) With reference to IEC 62321-3-1:2013, screening by EDXRF spectroscopy.
- (2) Wet chemical test method: With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC 62321-7-1:2015, IEC 62321-7-2:2017, ISO 17075-1:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES,UV-Vis and GC-MS.



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Verification Part Description:

Verification Par	t Description:		
SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	SHA23-0022805-0001.C001	Silvery metal (cover plate)
SN2	A2	SHA23-0022805-0001.C002	Beige adhesive (gasket cement)
SN3	A3	SHA23-0022805-0001.C003	Silvery metal (cover plate)
SN4	A4	SHA23-0022805-0001.C004	Silvery metal (washer)
SN5	A5	SHA23-0022805-0001.C005	Silvery magnet
SN6	A6	SHA23-0022805-0001.C006	Silvery metal (connecting rod)
SN7	A7	SHA23-0022805-0001.C007	Golden metal (washer)
SN8	A8	SHA23-0022805-0001.C008	Golden metal (boot)
SN9	A9	SHA23-0022805-0001.C009	Golden metal (washer)
SN10	A10	SHA23-0022805-0001.C010	Silvery metal (bearing)
SN11	A11	SHA23-0022805-0001.C011	Black diode (body) (PCB)
SN12	A12	SHA23-0022805-0001.C012	Black audion (body) (PCB)
SN13	A13	SHA23-0022805-0001.C013	Green PCB (body)
SN14	A14	SHA23-0022805-0001.C014	Silvery metal (soldering tin) (PCB)
SN15	A15	SHA23-0022805-0001.C015	Silvery metal (shell)
SN16	A16	SHA23-0022805-0001.C016	Silvery/Black adhesive plastic (label)
SN17	A17	SHA23-0022805-0001.C017	White plastic (boot)
SN18	A18	SHA23-0022805-0001.C018	Copper-colored metal (enamelled wire)
SN19	A19	SHA23-0022805-0001.C019	Silvery metal (silicon plate)
SN20	A20	SHA23-0022805-0001.C020	White plastic (washer)
SN21	A21	SHA23-0022805-0001.C021	Red plastic (wire sheath) (wire harness)
SN22	A22	SHA23-0022805-0001.C022	Black plastic (wire sheath) (wire harness)
SN23	A23	SHA23-0022805-0001.C023	Brown plastic (wire sheath) (wire harness)
SN24	A24	SHA23-0022805-0001.C024	Blue plastic (wire sheath) (wire harness)
SN25	A25	SHA23-0022805-0001.C025	Yellow plastic (wire sheath) (wire harness)
SN26	A26	SHA23-0022805-0001.C026	White plastic (wire sheath) (wire harness)
SN27	A27	SHA23-0022805-0001.C027	Gray plastic (wire sheath) (wire harness)
SN28	A28	SHA23-0022805-0001.C028	Green plastic (wire sheath) (wire harness)
SN29	A29	SHA23-0022805-0001.C029	Silvery metal (wire core) (wire harness)



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## Verification Result(s):

In accordance with the result of material risk assessment, the following disjointed parts in the submitted sample have been verified. (Unless otherwise specified, the unit is mg/kg).

					0 0/			
Test Item(s)	A1	A2	A3	A4	A5	A6	A7	A8
Cd	BL	BL						
Pb	BL	BL	BL	BL	BL	BL	24261 ▲	18945▲
Hg	BL	BL						
Cr(VI)▼	BL	BL	ND	ND	BL	ND	BL	BL
PBBs		BL			BL			
PBDEs		BL			BL			
DBP		BL						
BBP		BL						
DEHP		BL						
DIBP		BL						
Conclusion	PASS	PASS						

Test Item(s)	A9	A10	A11	A12	A13	A14	A15	A16
Cd	BL	BL	BL	BL	BL	BL	BL	BL
Pb	16821 ▲	BL						
Hg	BL	BL	BL	BL	BL	BL	BL	BL
Cr(VI)▼	BL	ND	BL	BL	BL	BL	BL	BL
PBBs			BL	BL	ND			BL
PBDEs			BL	BL	ND			BL
DBP			BL	BL	BL			BL
BBP			BL	BL	BL			BL
DEHP			BL	BL	BL			BL
DIBP			BL	BL	BL			BL
Conclusion	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Test Item(s)	A17	A18	A19	A20	A21	A22	A23	A24
Cd	BL							
Pb	BL							
Hg	BL							
Cr(VI)▼	BL	BL	ND	BL	BL	BL	BL	BL
PBBs	BL	BL		BL	BL	BL	BL	BL
PBDEs	BL	BL		BL	BL	BL	BL	BL
DBP	BL	BL		BL	BL	BL	BL	BL
BBP	BL	BL		BL	BL	BL	BL	BL
DEHP	BL	BL		BL	BL	BL	BL	BL
DIBP	BL	BL		BL	BL	BL	BL	BL
Conclusion	PASS							

I	Test Item(s)	A25	A26	A27	A28	A29
	Cd	BL	BL	BL	BL	BL
	Pb	BL	BL	BL	BL	BL
	Hg	BL	BL	BL	BL	BL
	Cr(VI)▼	BL	BL	BL	BL	BL



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Test Item(s)	A25	A26	A27	A28	A29
PBBs	BL	BL	BL	BL	
PBDEs	BL	BL	BL	BL	
DBP	BL	BL	BL	BL	
BBP	BL	BL	BL	BL	
DEHP	BL	BL	BL	BL	
DIBP	BL	BL	BL	BL	
Conclusion	PASS	PASS	PASS	PASS	PASS



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## Notes:

- (1) Interpretation of screening results by X-ray fluorescence spectrometry (XRF):
  - (a) Screening limits in mg/kg for regulated elements in various matrices according to IEC 62321-1:2013 Annex A as below table.

Element	Polymer	Metal	Composite Materials
Cd	BL ≤(70-3σ)< X	BL ≤(70-3σ)< X	LOD < X
	<(130+3σ)≤OL	<(130+3σ)≤OL	<(150+3σ)≤ OL
Pb	BL ≤(700-3σ)<	BL ≤(700-3σ)< X	BL ≤(500-3σ)<
	X<(1300+3σ)≤ OL	<(1300+3σ)≤ OL	X<(1500+3σ)≤ OL
Hg	BL ≤(700-3σ)< X	BL ≤(700-3σ)< X	BL ≤(500-3σ)< X
	<(1300+3σ)≤ OL	<(1300+3σ)≤ OL	<(1500+3σ)≤ OL
Br	BL ≤ (300-3σ)< X	Not Applicable	BL ≤ (250-3σ)< X
Cr	BL ≤ $(700-3\sigma)$ < X	BL ≤ (700-3σ)< X	BL ≤ (500-3σ)< X

- (b) If the maximum allowed level restricts PBB/PBDE and Cr(VI) rather than Br and Cr, the exceptions are the XRF determinations of Br and Cr. If the quantitative results for the elements Br and/or are higher than the limit (for Br calculated based on the stoichiometry of Br in the most common congeners of PBB/PBDE), the sample is "inconclusive".
- (c) Results are obtained by EDXRF for primary screening, LOD = Limit of Detection, BL = Below Limit, OL = Over Limit, IN (The symbol X marks the region)= Inconclusive, where further investigation is necessary, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs/PBDEs) are recommended to be performed.
- (d) The EDXRF screening test for RoHS elements The reading may be different to the actual content in the sample be of non-uniformity composition.
- (2) Screening results of Phthalates (PHTH) are for primary screening, and further chemical testing by GC-MS(for DBP, BBP, DEHP and DIBP) are recommended to be performed if the concentration exceeds the below warning value (unit: mg/kg).

Test Items	CAS No.	Polymer/ Composite Materials
Dibutyl Phthalate (DBP)	84-74-2	BL ≤ 600< X
Benzylbutyl Phthalate (BBP)	85-68-7	BL ≤ 600< X
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	BL ≤ 600< X
Diisobutyl Phthalate (DIBP)	84-69-5	BL ≤ 600< X

(3)Interpretation of results by chemical tests:

- (a) mg/kg = 0.0001%, MDL=Method detection Limit, ND = Not Detected (<MDL), --- = Not Applicable.
- (b) Unit and MDL in wet chemical test

Test Items	Pb	Cd	Hg	DBP	BBP	DEHP	DIBP
Unit	mg/kg						
MDL	10	10	10	100	100	100	100

The MDL for single compound of PBBs and PBDEs is 100 mg/kg,



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> MDL of Cr(VI) for polymer, composite and leather sample is 10 mg/kg. MDL of Cr(VI) for metal sample is 0.10 µg/cm<sup>2</sup>.

- (c) ▼ =Metal sample
  - a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm². The sample coating is considered to contain Cr(VI).
  - b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-Cr(VI) based coating
  - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusiveunavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

- (4) Restricted substances and maximum concentration values tolerated by weight in homogeneous materials under RoHS Directive: Cd: 0.01%, Pb/Hg/Cr(VI)/PBBs/PBDEs /DEHP/DBP/BBP/DIBP: 0.1%. The limit is quoted from RoHS Directive (EU) 2015/863.
- (5) IEC 62321 series is equivalent to EN 62321 series.
- (6) ▲ =According to the declaration from the client, Lead (Pb) in No. A7, A8, A9 is exempted by EU RoHS directive 2011/65/EU based on |ANNEX III 6(c)|: Copper alloy containing up to 4 % lead by weight.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019.



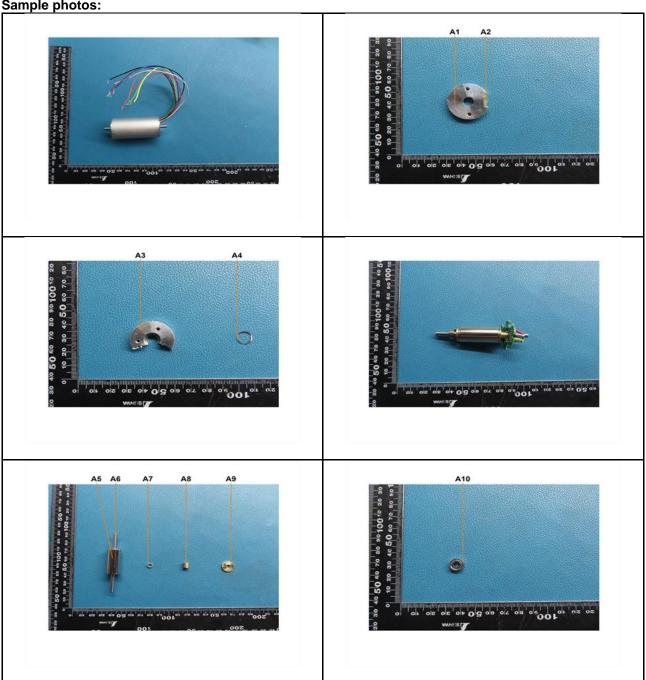
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Sample photos:



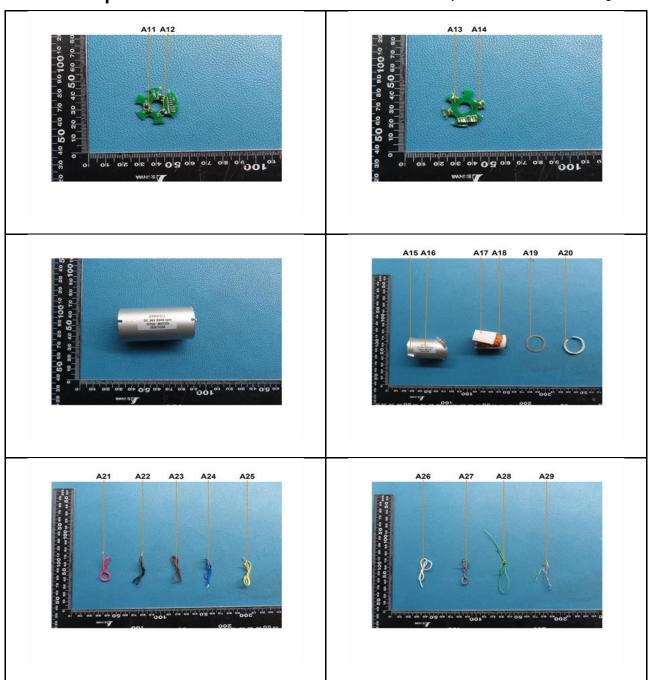


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